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operates in, for example, a surface acoustic wave (SAW) resonance mode, a thickness shear mode (TSM), a flexural plate wave (FPW) resonance mode, or other resonance mode. When the electrode acts as a resonator, its resonating response is affected by, for example, the sample's viscosity and density. Copending U.S. Application No. 09/133,171 to Matsiev et al, filed August 12, 1998, describes mechanical resonators in more detail and is incorporated by reference herein.

On Page 1, please replace the paragraph referred to as "RELATED CASES" with the following paragraph, which is the clean version of the paragraph:

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E,
The present application is related to co-pending U.S. Patent Application No. 09/210,428 and U.S. Patent Application No. 09/210,086, all filed on December 10, 1998 and incorporated herein by reference.

In the claims:

Please amend claims 8-9, 12-14, 16, 19-20, 23, 25, 131, 132, 134, 135, 138, 140, 141, 143 and 145 as follows:

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8. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein the thermal property characterized by said sensor array is at least one selected from the group consisting of heat capacity, thermal conductivity, and thermal stability.

9. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein at least one sensor in said sensor array comprises:
a microthin film membrane supported by said substrate such that said sensor array is an array of microthin film windows; and
a heater/thermometer pattern disposed on said microthin film membrane.

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12. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein said microthin film membrane forming said at least one sensor is a silicon

nitride membrane, and wherein said substrate supporting said silicon nitride membranes ~~is~~ said sensor array is a silicon wafer.

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S2
E3
13. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein said substrate ~~is~~ made of a polymer sheet, and wherein said sensor array includes a plurality of heaters/thermometers disposed on said polymer sheet.

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S2
E3
16. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein said substrate is made of a poor thermal conducting material that is at least 100 microns thick, and wherein said sensor array includes a plurality of heaters/thermometers disposed on said poor thermal conducting material.

19. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein said substrate is made of a polymer sheet.

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S2
E3
20. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein said substrate is made from a material having poor thermal conductivity and is placed on a heater block, and wherein said sensor array includes a plurality of temperature sensors disposed on the substrate such that a temperature difference between a first portion and a second portion of the substrate can be determined.

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S2
E3
23. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein the at least one thermal property characterized by said sensor array is a complex dielectric constant.

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S2
E3
25. (Amended) The apparatus of claim 1, 2, 3, 4, 5 or 6, wherein at least one sensor in said sensor array further comprises a thermometer such that said at least one sensor can conduct a dielectric constant measurement and a thermal measurement simultaneously.

131. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein the thermal property characterized by

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said sensor array is at least one selected from the group consisting of heat capacity, thermal conductivity, and thermal stability.

132. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein at least one sensor in said sensor array comprises:

a microthin film membrane supported by said substrate such that said sensor array is an array of microthin film windows; and

a heater/thermometer pattern disposed on said microthin film membrane.

134. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein said microthin film membrane forming said at least one sensor is a silicon nitride membrane, and wherein said substrate supporting said silicon nitride membranes in said sensor array is a silicon wafer.

135. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein said substrate is made of a polymer sheet, and wherein said sensor array includes a plurality of heaters/thermometers disposed on said polymer sheet.

138. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein said substrate is made of a poor thermal conducting material that is at least 100 microns thick, and wherein said sensor array includes a plurality of heaters/thermometers disposed on said poor thermal conducting material.

140. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein said substrate is made of a polymer sheet.

141. (New) The apparatus of claim 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123 or 124, wherein said substrate is made from a

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